

552432

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
29 December 2004 (29.12.2004)

PCT

(10) International Publication Number
WO 2004/113417 A1

(51) International Patent Classification⁷: **C08G 77/38**,
C08L 83/04, C09D 183/04

(21) International Application Number:
PCT/US2004/016265

(22) International Filing Date: 20 May 2004 (20.05.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/473,669 23 May 2003 (23.05.2003) US

(71) Applicant (for all designated States except US): **DOW CORNING CORPORATION** [US/US]; 2200 West Salzburg Road, P.O.Box 994, Midland, MI 48686-0994 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **ZHONG, Bianxiao** [US/US]; 4308 Linden Drive, Midland, MI 48640 (US). **MOYER, Eric, S.** [US/US]; 4500 Andre Street, Midland, MI 48642 (US).

(74) Agent: **RAYMUND, Eric, F.**; Williams, Morgan & Amer- son, P.C., 10333 Richmond Ave., Suite 1100, Houston, TX 77042 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:

— of inventorship (Rule 4.17(iv)) for US only

Published:

— with international search report

— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: **SILOXANE RESIN-BASED ANTI-REFLECTIVE COATING COMPOSITION HAVING HIGH WET ETCH RATE**

(57) Abstract: Herein we disclose a composition, comprising a siloxane resin having the formula $(\text{HsiO}_{3/2})_a(\text{SiO}_{4/2})_b(\text{HSiX}_{3/2})_c(\text{SiX}_{4/2})_d$, wherein each X is independently -O-, -OH, or -O-(CH₂)_m-Z_n, wherein each m is independently an integer from 1 to about 5, Z is an 5 aromatic moiety, and each n is independently an integer from 1 to about 6; $0 < a < 1$, $0 < b < 1$, $0 < c < 1$, $0 < d < 1$, and $a + b + c + d = 1$. We also disclose methods for preparing the siloxane resin composition and a method of preparing an anti-reflective coating on a substrate, wherein the anti-reflective coating is derived from the siloxane resin composition.



WO 2004/113417 A1